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To Assess the Knowledge, Attitude and Practice of Oral Hygiene Protocols Among Patients Having Orthodontic Treatment

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INTRODUCTION: Orthodontic treatment is widely acknowledged and accepted in everyday dental practice due to the positive effects it has on the dentofacial complex. Importance of oral hygiene in orthodontic patients is also important to prevent any further oral diseases.

AIM: The aim of this study was to assess the knowledge, attitude, and practice of oral hygiene protocols among patients having orthodontic treatment.

MATERIALS AND METHOD: The sample consisted of 90 patients who had permanent dentition from the Department of Orthodontics and Dentofacial Orthopedics and various questions were asked regarding the knowledge, attitude and practice on oral hygiene during the time of orthodontic treatment. All the responses were analysed statistically.

RESULTS: The results of the study showed that nearly 40% of the patients were unaware about gingival health, 65% did not follow the oral hygiene instruction. Despite being given instructions, most of them were reluctant in practicing them strictly.

CONCLUSION: The knowledge, attitude, practice of oral hygiene among orthodontic patients were poor and showed the need of better education and motivation. Many factors may be responsible for the non-maintenance of gingival health practices. There is a need to incorporate and evaluate more intense oral hygiene programs in the future.

KEYWORDS: Gingiva, Oral Hygiene, Awareness, Orthodontic

INTRODUCTION

Oral health can be influenced by various jaw and face related anomalies during their development stages. Dental plaque accumulation can occur due to the deviations from an ideal arrangement and position of teeth which is considering as the auxiliary factor. Because of strong positive effect on the dentofacial complex; orthodontic treatment is widely acknowledged and accepted in everyday's dental practice. Good oral hygiene is a key factor required to facilitate uninterrupted orthodontic treatment as well as to prevent and control the oral diseases, dental caries and periodontal disease.^{1,2}

It's been said through many of the studies that occurrence of gingival problems are more in patients with fixed orthodontic appliances such as braces, arches, and rings as they increase retention places for accumulation of dental plaque.³ Hence maintenance of oral hygiene along with proper information in orthodontic patients is always intensified to prevent any further periodontal disease. Moreover oral hygiene techniques have to be strictly followed by the patients like refraining from hard and sticky foods.^{4,5}

Even the preservation of gingival health should be of main concern for the patients till the end of orthodontic treatment. Hence regular oral hygiene

maintenance is of great importance. But sadly it's been reported through few of the studies that level of knowledge regarding gingival health is not adequate. Sometimes patients are not provided with proper instructions which can also lead to their non-compliance. But despite of appropriate instructions, many of the individuals fails to follow instructions.^{6,7} Therefore the ideal technique as well as duration of tooth brushing with constant and thorough motivation of patients is key factors for regular maintenance of oral hygiene. Hence an attempt was made to assess the level of knowledge regarding oral hygiene practices among those who are undergoing orthodontic treatments.

METHODOLOGY

The present cross sectional survey was conducted by among 90 orthodontic patients who were selected from simple random sampling in the Department of Orthodontics and Dentofacial Orthopedics, of a Dental College in India (Name withheld on request).

Ethical approval was obtained from the Institutional Review Board and informed consent was taken from all the study participants prior to the study. Participation in the study was voluntary and confidentiality of data was maintained. Data

collection for the study was collected through the self-administered questionnaire which consisted of close ended questions.

The questionnaire was pretested on 15 patients who were not included in the main study and comprised 16% of the study sample for reliability and validity. Reliability of the questionnaire was assessed using test-retest and internal consistency of the questionnaire was ascertained by Chronbach's-Alpha (α). Construct validity of the questionnaire was assessed using Spearman's correlation coefficient between individual parameter/construct and overall score of the construct.

The collected data were analysed using Statistical Package for Social Sciences (SPSS) 18.0 (SPSS Inc., Chicago, IL, USA) and descriptive and analytical tests, including mean, standard deviation, and Chi square test.

RESULTS

In the present study, 82 patients from the 90 answered to the questions which were asked during the study regarding oral hygiene instructions during the orthodontic treatment. Hence response rate of 91% was generated in the present study.

It was seen through this study that only few numbers of subjects were aware about the oral hygiene practices. The current study consisted of 45% of boys and 55% of girls. The mean age of boys was 9.87 ± 3.079 where as girls were having 6.87 ± 2.079 of mean age.

It was seen in this study that majority of the subjects i.e. 48% were brushing their teeth in circular manner followed by 32% were into vertical and 20% were using the horizontal motion for the brushing. It was seen also observed through this study that 62% were brushing their teeth once a day and only 28% were brushing twice a day. Questions related to mouth wash usage and regarding fluoridated tooth paste were asked, where only 45% were using mouth washes and 37% of the study subjects knew about the fluoridated tooth paste. It was also seen that only 32% of the population were changing their tooth brush after appropriate time. Regarding the interdental aids when questions were asked, 22% of the population were using interdental brushes, 18% were using floss and 60% of the population were not using any of the interdental aid.

TRAUMATIC INJURIES	FREQUENCY	VALID PERCENT	CHI SQUARE VALUE	P VALUE
Bleeding gums	34	41.46 %	342.972	0.00*
Gingival problems	29	35.26 %		
Bad breath	09	10.97%		
Food accumulation	06	7.31%		

Table 1: Number of oral health related problems among the studied subjects

DISCUSSION

During the orthodontic treatment phase awareness regarding the oral hygiene is as important like the general health awareness. Active cooperation of orthodontic patients is also essential over a prolonged treatment along with the maintenance of an adequate level of oral hygiene through proper knowledge and positive attitude and practices.^{3,6,8}

It was seen that majority of the patients were brushing their teeth in circular manner followed by vertical and horizontal strokes, which is generally a poor knowledge on brushing strokes and techniques. Circular brushing is commonly advisable in children and it's the least effective brushing technique.^{9,10} Even the horizontal method should not include in regular manner for longer period of time as it can cause cervical abrasion. Ideally the most effective brushing stroke is the vertical stroke because it cleans the interproximal areas along with its usefulness nature in those who are undergoing orthodontic treatment.^{1,4,10}

Maintaining good oral hygiene procedures during fixed appliance therapy is important for gingival health. Along with good brushing technique, mouthwashes are often recommended to control plaque.^{3,9} But in the present study few number of subjects were into the habit of using mouthwashes i.e.45% and results are in agreement with the study done by Baheti and Toshniwal, where 57.4% of the population used mouthwash.¹¹

It's been clearly said in many of the researches that fluoride is useful in prevention of tooth decay by giving the strength to the tooth enamel. But in our study only 37% of the population were aware about it and are into the usage of fluoridated toothpastes. While during the orthodontic treatment brushing twice a day is ideal and should be recommended.^{9,12,13} Unfortunately it's been seen in this study that only few of the subjects were brushing twice a day and the results of our study are not comparable to the study done by Ajayi and Azodo, where 70.4% of females brushed twice a day, 7.4% brushed once a day, and 18.5% brushed thrice a day.^{9,10}

It is said by many of the studied that accumulation of plaque occurs in greater manner at orthodontic appliances at the gingival margins which further contributes to gingival inflammation and periodontal status of patients who are undergoing orthodontic treatment has been the focus of attention.^{6,9,14} Hence monitoring of oral health status was done in this study, where it was seen that around 90% of the studied population were suffering from various oral health related problems such as bleeding gums, bad breath, food accumulation, gingival problems etc. Therefore an orthodontist has to enforce the oral hygiene program into orthodontic treatment throughout the treatment period.

CONCLUSION

The final picture of this study gives inadequate awareness and inappropriate practice of oral hygiene among orthodontic patients. The knowledge, attitude, and practice of oral hygiene among orthodontic patients showed the need for better education and motivation. There is urgent need for educating and motivating the orthodontic patients on oral hygiene.

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